The translation has been very carefully made. In fact, the degree of literality is, in many places, so great that good English usage is not found. This is, however, probably to some extent intentional on the part of the translator, for the sake of exactness in presenting the author's views. Mr. Skerl has done a valuable piece of work in presenting this translation to English-speaking investigators.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

REGELATION AND LOW TEMPERATURES

EVERY year we show the freshman class in physics that a loaded wire will cut through a block of ice leaving the block intact. Every year the students read the insufficient discussions in their text-books (there is one recent text that does explain fully), most of them not getting beyond "The pressure melts the ice." If pushed for a further analysis, they say that the energy to melt the ice comes from the descending weight, and they accordingly conclude that the cutting of the block would go on at any temperature.

After several years of arguing, finding the students uniformly unconvinced and even the instructors often doubtful, and never in the whole time having met an inquirer who had seen the experiment tried at low temperatures, I decided to bolster up "I can see, with my mind's eye" with "I have seen with my own eyes."

A rectangular block of ice, taken from the refrigerator and treated in the usual manner, was cut through by the loaded wire in forty minutes. The whole apparatus was then put out of doors for several hours and then the wire loaded as before. During the eighteen hours that the experiment was continued the temperature of the surrounding atmosphere varied from 0° Fahr. to −20° Fahr. In that time the only effect of the wire on the ice was a mechanical chipping out of a bit at each of the sharp upper corners of the block. Across the top of the block the wire touched only the highest points and even there produced no observable effect.

This experiment is reported as just one more instance where the time and energy required to make the convincing test is but a small fraction of the time and energy spent in fruitless office-chair debate about how nature ought to operate.

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SPECIAL ARTICLES

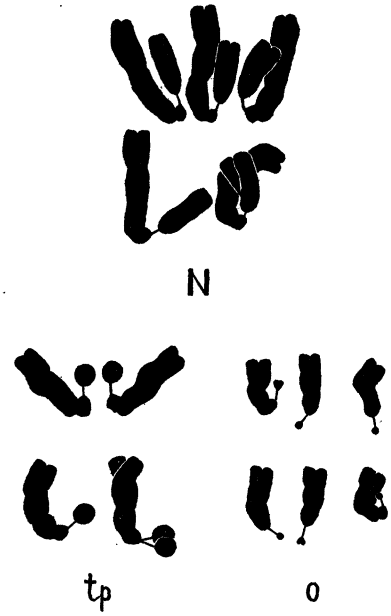
THE S-CHROMOSOMES IN ORNITHOGALUM L.

As my paper on the chromosomes of the Ornithogalum, which I wrote in 1923, is not yet printed, I should like to publish a preliminary note concerning the chromosomes possessing satellites,[1] which I call chromosomes S.

In 1915 D. J. Persidsky found in *O. umbellatum* L. satellites of a length hitherto unknown. This discovery was made in the laboratory of Professor S. G. Nawaschin and remains unpublished. When, in 1921, I began the investigation of other species of Ornithogalum, I found that in them there are also chromosomes with satellites—one pair of such chromosomes in each diploid nuclear plate of each species. The length of the satellites was, however, found to be very unequal in different species. The same can be stated also about the length of the "body" itself of the chromosomes S. Nevertheless, I take it for certain that the S-chromosomes of one species are homologous with the S-chromosomes of the others.

The S-chromosomes are easily distinguishable and therefore very convenient for comparative studies.

In Fig. 1 are represented the S-chromosomes of three species: *O. Narbonense* L. (N), *O. tempskyanum* Fr. et Sint. (tp) and *O. oligophyllum* Clarke (o).



The satellites of *O. umbellatum,* studied by D. J. Persidsky, are still longer than those of *O. Narbonense.*

The lengths of all the other chromosomes of Ornithogalum are also unequal in different species, and

[1] See Tischler, G., 1922. Allgemeine Pflanzenkaryologie, Berlin, Borntraeger, pp. 526 and 632.